Neuro-Oncology 17:v130–v134, 2015.
doi:10.1093/neuonc/nov220.19

NEURO-ONCOLOGY

Abstracts

MNGO-20. SOMATOSTATIN RECEPTOR-TARGETED RADIONUCLIDE THERAPY FOR PROGRESSIVE MENINGIOMA

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BACKGROUND: There is no standard of care beyond surgery and radiotherapy for patients with progressive meningioma. Somatostatin receptors have been proposed as therapeutic targets. However, systemic administration of somatostatin analogs has shown only limited efficacy. Somatostatin receptor-targeted radionuclide therapy represents a novel treatment option for progressive meningioma. METHODS: In a retrospective analysis, we assessed safety and efficacy of somatostatin receptor-targeted radionuclide therapy (^{90}Y-DOTATOC (n = 3) or ^{177}Lu-DOTATATE (n = 16) or both (n = 1)) in 20 patients with progressive, treatment-refractory meningiomas (histological grading: 5 WHO grade I, 7 WHO grade II, 8 WHO grade III meningiomas). Changes in the growth rate before and after therapy were assessed by volumetric analysis where applicable. RESULTS: Somatostatin receptor radionuclide treatment was well tolerated. A median of 3 treatment cycles were given (median administered dose per cycle 7400 MBq). Response to treatment was moderate with disease stabilization in 10 of 20 patients for a median time of 17 months. Median progression-free survival (PFS) for all patients was 5.4 months, 32.2 months for grade I, 7.6 months for grade II and 2.1 months for grade III meningiomas. PFS correlated inversely with tumor grade. Median overall survival from start of intervention was not reached at a medium follow-up time of 20 months. Volumetric measurement showed a reduction of more than 25% of growth rate after therapy in 4 of 8 patients analyzed. Correlation between intensity of somatostatin receptor expression of single meningioma lesions via ^{68}Ga-DOTATOC/-TATE-PET/CT or via immunohistochemistry and outcome was investigated. CONCLUSION: Somatostatin receptor-targeted radionuclide treatment is a safe therapy option in patients with progressive meningioma and is effective in a subset of patients with WHO grade I and grade II meningioma requiring systemic therapy, but might have limited efficacy in patients with WHO grade III meningioma.